

Individual Nomad Clinical Assistant: Supporting Nurses at the Point of Care

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Abstract. Accessing patients' data at the point of care has the potential to ease the workflow of nurses and to improve the documentation. We have launched an initiative to develop a mobile assistant focused on managing nurses' daily intervention. The design has required the involvement of many stakeholder and has followed a user centered design process. The evaluation is planned in two stages with an increasing level of ecology. The solution is a client server application displaying a contextualized view on nurses' interventions. It allows to validate and comment each intervention presented as an item in a list. Deploying mobile client applications in healthcare is a challenging task not only from a technical point of view but also regarding organizational factors and human factors.

Keywords. mHealth, Software Design, Nurses; Hospital Information Systems, Mobile Applications, Nurses, User-Computer Interface

1. Introduction

Mobile client applications for Hospital Information Systems (HISs), such as electronic health records (EHR) provide the flexibility of accessing patient information from anywhere at any time [1-9].

In order to simplify nurses' workflow, we have launched an initiative to develop an individual nomad clinical assistant (INCA©), a mobile app running on smartphone aiming at displaying relevant clinical information at the point of care. The first release of the application is mostly focused on nurses' daily interventions but will be extended in the future.

2. Methods

The design of the global architecture of INCA© has required the involvement of many stakeholders representing the different domains impacted in several rounds of discussions. The user interface development has followed a user centered design including mainly nurses in focus group.

In order to evaluate the solution, a two stage usability evaluation must be carried out. In a first phase, a think aloud protocol will be prepared to identify usability issues

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among a limited number of nurses performing predefined scenarios. In a second phase, a usability test will be carried out to compare nurses' performance with and without the mobile tool in their usual working environment.

3. Results

The global architecture of the solution is composed of a server responsible to query the existing services of the HIS in order to collect and format the relevant information for a given nurses. The information is then sent and displayed on the mobile application.

INCA© is a multiplatform smartphone application displaying a contextualized view on nurses' interventions. It allows them to validate and comment each intervention presented as an item on a list.

4. Discussion

Deploying mobile client applications in healthcare environment opens much wider questions than purely technical ones. The design of the global architecture requested to collaborate closely with many stakeholders of the existing EHR. Among the toughest challenges, security, infrastructure and users' adherence questions must be clearly solved in order to ensure the success of the solution.

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